

# A REVISION OF THE NEARCTIC SPECIES OF CYMODUSA HOLMGREN

(HYMENOPTERA: ICHNEUMONIDAE)

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## Abstract

The nearctic species of Cymodusa Holmgren (Hymenoptera: Ichneumonidae) are revised. Five species are re-described: cruentata (Gravenhorst); distincta (Cresson); melanocera Viereck; nigripes (Viereck); partis (Viereck). Four species and one subspecies are new to science: columbiensis; montana; nicolei; ruficincta; partis ocularis. One new synonym was created: provancheri Viereck = distincta (Cresson).

## Introduction

The genus Cymodusa is widely distributed throughout the holarctic, oriental, and neotropical regions. The palearctic species are being revised by Dbar (Leningrad). The paper which follows represents the first revision of the nearctic species and includes nine species in two species-groups. Four species and one subspecies are new to science. There is a key to the species-groups and species from the nearctic region along with illustrations (S.E.M. photomicrographs) and distribution maps.

The biology of Cymodusa is essentially unknown and many of the world's species remain undescribed and, for these reasons, no attempt has been made to produce a phylogeny or provide a zoogeographical analysis.

## Cymodusa Holmgren

Cymodusa Holmgren, 1859 (1858). Svenska Vetensk-Akad. Ofvers. af.....  
Forhandl. 15: 325.

Type-species: Cymodusa leucocera Holmgren, by original desig.

Thersitia Schmiedknecht, 1907. Hym. Mitteleuropas: 598.

Type-species: Thersitia egregia Schmiedknecht (= C. leucocera Holmgren), by monotypy.

Fore wing 3.0-5.5 mm. long. Body elongate. Eye moderately indented opposite antennal socket. Cmpd. eyes distinctly hairy, with inner margins weakly convergent ventrad in males, strongly convergent ventrad in females. Lower facets of cmpd. eyes of females 1.4-1.8 x as wide as upper facets, of equal size in males. Base of female flagellum of some species white on inner side. Tentorial pits (= clypeal foveae) separated from inner margins of eyes

by distance less than or equal to dia. of single pit in females, or sometimes touching the inner margin. Clypeus moderately convex, with anterior margin evenly, moderately convex. Mandible short, its lower edge with a high carina or narrow flange, with teeth approx. equal length. Temple short. Genal carina joining oral carina. Lower 0.5 of mesopleuron matte, with fine to medium sized punctures and usually with distinct rugosities. Propodeum moderately long to long, with apex projecting between bases of hind coxae a distance equal to 1.2-1.4 x the length of hind coxa. Areola usually confluent with petiolar area, sometimes partially or completely separated by incomplete or complete transverse carina. Propodeal spiracle round. Hind basitarsus without a median ventral row of closely spaced hairs. Tarsal claws pectinate only at base. Areolet of fore wing closed (except nicolei). Nervulus opposite basal vein or distad by as much as 0.2 x its length. Discoidella intercepting nervellus, not pigmented. First abdominal segment moderately long, slender, weakly to moderately decurved distad of spiracle, with petiole weakly, evenly dorso-ventrally tapering from spiracle to base, its sides usually smooth, polished. Glymma absent. Second abdominal tergite 1.3-3.0 x as long as wide in females, 1.5-5.0 x in males. Ovipositor stout, compressed, nearly straight (except nigripes where it is slender, moderately upcurving), approx. 1.5-2.2 x as long as hind femur.

There are nine species known from the nearctic region. They occur mostly in grassy meadows but there are no rearing records. The few rearing records from the palearctic region indicates that the hosts are small lepidoptera.

#### Key to the Species-Groups and Species of Nearctic Cymodusa

The males of ruficineta and columbiensis are unknown but are placed in the key on the basis of characters they are presumed to have.

1. Cmpd. eyes strongly converging ventrad in females, with lower facets approx. 1.4 x as wide as upper facets. Tentorial pit of females never touching inner margin of eye. Second abdominal tergite approx. 1.3-1.8 x as long as wide in females, 1.5-2.2 x in males. Antennal flagellum of some females white on inner surface of basal articles.....  
.....Cruentata Group.2.
- Cmpd. eyes very strongly converging ventrad in females, with lower facets approx. 1.8 x as wide as upper facets. Tentorial pit of females always touching inner margin of eye. Second abdominal tergite approx. 2.0-3.0 x as long as wide in females, 2.5-5.0 x in males. Antennal flagellum of females uniformly black.....Melanocera Group..15.
2. Females.....3.  
Males.....9.
3. Antennal flagellum with basal article(s) white on inner surface.....4.  
Antennal flagellum uniformly black.....6.
4. Ovipositor approx. 1.5-2.0 x as long as hind femur, stout, more or less straight.....5.

- Ovipositor approx. 2.1-2.2 x as long as hind femur, slender, moderately upcurving. eastern N. America.....nigripes (Viereck) (p. 4)
5. Abdominal tergites 2-5 black basally, rufous apically. Hind coxa black, with at most some ferrugineous at extreme apex. Hind femur extensively infuscated to entirely black. Boreal forest, Rocky Mts.....  
.....partis (Viereck) (p. 6).
- Abdominal tergites not as above, with tergites 4, 5 entirely rufous. Hind coxa with apical 0.5-0.7 ferrugineous. Hind femur usually entirely ferrugineous. B.C. s. to Ore., e. to N.S., s. to Fla.....  
.....distincta (Cresson) (p. 10)
6. Abdominal tergites with alternating banding pattern or entirely black..7.  
Abdominal tergites 2 to apex entirely rufous. Pacific Northwest.....  
.....ruficineta, new sp. (p. 12)
7. Abdominal tergites 2-4 (sometimes only 2 and 3) black basally, rufous apically.....8.  
Abdominal tergites uniformly fuscous to black. B. C.....  
.....columbiensis, new sp. (p. 14)
8. Hind femur ferrugineous, with a small baso-ventral infuscated area....  
Holarctic (Boreal Forest, n. U.S.)....cruentata (Gravenhorst) (p. 16)  
Hind femur more extensively infuscated than above to entirely black....  
Boreal Forest, Rocky Mts.....partis (Viereck) (p. 6)
9. Abdominal tergites 4, 5 entirely rufous.....10.  
Abdominal tergites 4, 5 black and rufous banded or entirely black....12.
10. Abdominal tergites 2 to apex entirely rufous (apical tergites sometimes infuscated dorsally). Hind coxa black.....11.  
Abdominal tergites 2 to apex never entirely rufous. Hind coxa with apical 0.3-0.5 ferrugineous.....distincta (Cresson) (p. 10)
11. Hind femur ferrugineous. Pacific Northwest...ruficineta, new sp. (p. 12)  
Hind femur extensively infuscated to entirely black. eastern N. America  
.....nigripes (Viereck) (p. 4)
12. Abdominal tergites 2-4 black basally (sometimes only 2, 3), rufous apically.....13.  
Abdominal tergites entirely fuscous to black.....14.
13. Hind femur extensively infuscated to entirely black. Boreal Forest....  
Rocky Mts.....partis (Viereck) (p. 6)  
Hind femur ferrugineous, with a small baso-ventral infuscated area....

- Holarctic (Boreal Forest, n. U. S.)..cruentata (Gravenhorst) (p.16)
14. Hind femur ferrugineous to weakly infuscated. B.C.....  
 .....columbiensis, new sp. (p.14)
- Hind femur extensively to entirely black. Colorado.....  
 .....partis (Viereck) (p. 6 )
15. Females.....16.  
 Males.....18.
16. Fore wing with areolet closed. Second abdominal tergite 1.6-2.4 x as  
 long as wide.....17.
- Fore wing with areolet open. Second abdominal tergite approx. 3.0 x as  
 long as wide. N. and S. Carolina, Tenn.....nicolei, new sp. (p.22)
17. Antennal flagellum with basal article approx. 5.0-6.0 x as long as wide.  
 Ovipositor approx. 1.7-1.9 x as long as hind femur. Widespread in  
 North, Middle, South America.....melanocera Viereck (p.18)
- Antennal flagellum with basal article approx. 4.7-5.0 x as long as wide.  
 Ovipositor approx. 1.5-1.7 x as long as hind femur. Texas, Mexico,  
 Panama.....montana, new sp. (p.19)
18. Fore wing with areolet closed. Second abdominal tergite approx. 2.4-  
 3.1 x as long as wide.....19.
- Fore wing with areolet open. Second abdominal tergite approx. 5.0 x as  
 long as wide. Tenn., N. and S. Carolina.....nicolei, new sp. (p.22)
19. Basal article of antennal flagellum approx. 3.0-3.5 x as long as wide.  
 Second abdominal tergite approx. 3.0-3.1 x as long as wide. Texas,  
 Mexico, Panama.....montana, new sp. (p.19)
- Basal article of flagellum approx. 3.5-4.0 x as long as wide. Second  
 abdominal tergite approx. 2.4-2.5 x as long as wide. Widespread in  
 North, Middle, South America.....melanocera Viereck (p.18)

#### Cruentata Group

The salient features of this group are given in the first couplet of the key above.

#### Cymodusa nigripes (Viereck)

Figs. 1, 3

Neonortonia nigripes Viereck, 1925. Can. Ent. 57: 179 (key); 57: 300. Male.  
 des. Holotype. Grey Mills, New Brunswick (CNC). Examined in 1984.

Neonortonia laevissima Viereck, 1925. Can. Ent. 57: 179 (key); 57: 301. Male.  
 des. Holotype. Annapolis, Nova Scotia (CNC). Examined in 1984.

Cmpd. eyes strongly convergent ventrad in females, distinctly hairy. Fore wing with areolet closed. Ovipositor approx. 2.1–2.2 x as long as hind femur, slender, moderately upcurving. Antennal flagellum of female with inner surface of basal articles white. Mandible often entirely black. Hind coxa entirely black. Abdominal tergites 3 to apex rufous.

Female. Antennal flagellum with 28–33 articles, the basal article approx. 3.6–4.0 x as long as wide. Antennal scape with inner margin approx. 1.4 x as long as outer margin. Cmpd. eyes strongly convergent ventrad, distinctly hairy, with lower facets approx. 1.4 x as wide as upper facets. Face strongly shagreened, matte, with minute, close-set punctures. Tentorial pit separated from inner margin of eye by distance less than or equal to dia. of pit, never touching inner margin. Clypeus strongly convex, with anterior margin moderately convex. Lower 0.5 of mesopleuron moderately to coarsely rugoso-punctate. Propodeum moderately long, with apex projecting between bases of hind coxae approx. 0.3 x the length of hind coxa. Propodeal carinae very strong, complete. Areola often separated from petiolar area by transverse carina. Petiolar area with coarse reticulate pattern of wrinkling. Hind femur approx. 5.2–5.5 x as long as deep. Hind tarsal claw with tip strongly bent, the shank straight. Petiolar segment of abdomen moderately decurving. Petiole approx. 1.5–1.6 x as long as postpetiole, with sides smooth, polished. Second abdominal tergite approx. 1.6–1.7 x as long as wide, with thyridium positioned at basal 0.2. Ovipositor approx. 2.1–2.2 x as long as hind femur, slender, moderately upcurving, its depth at mid length distinctly less than width of hind basitarsus. Fore wing approx. 4.5–6.5 mm. long. Hind wing with nervellus intercepted.

Antennal flagellum with 3–7 basal articles white on inner surface. Head, thorax petiolar segment of abdomen, basal 0.6–0.7 of 2nd tergite, coxae, basal segments of all trochanters, bases of fore and middle femora, entire hind femur, black. Mandible extensively to entirely black. Palpi fulvous. Tegula fuscous to black. Apical segments of all trochanters white. Apices of fore and middle femora ferruginous to fuscous. Fore tibia ferruginous; middle tibia ferruginous to fuscous; hind tibia black basally and apically, ferruginous medially. Hind tarsus fuscous. Apical 0.3–0.4 of 2nd abdominal tergite, abdominal tergites 3 to apex, rufous. In some specimens the hind femur is paler than described and abdominal tergites 4 to apex are sometimes weakly infuscated dorsally.

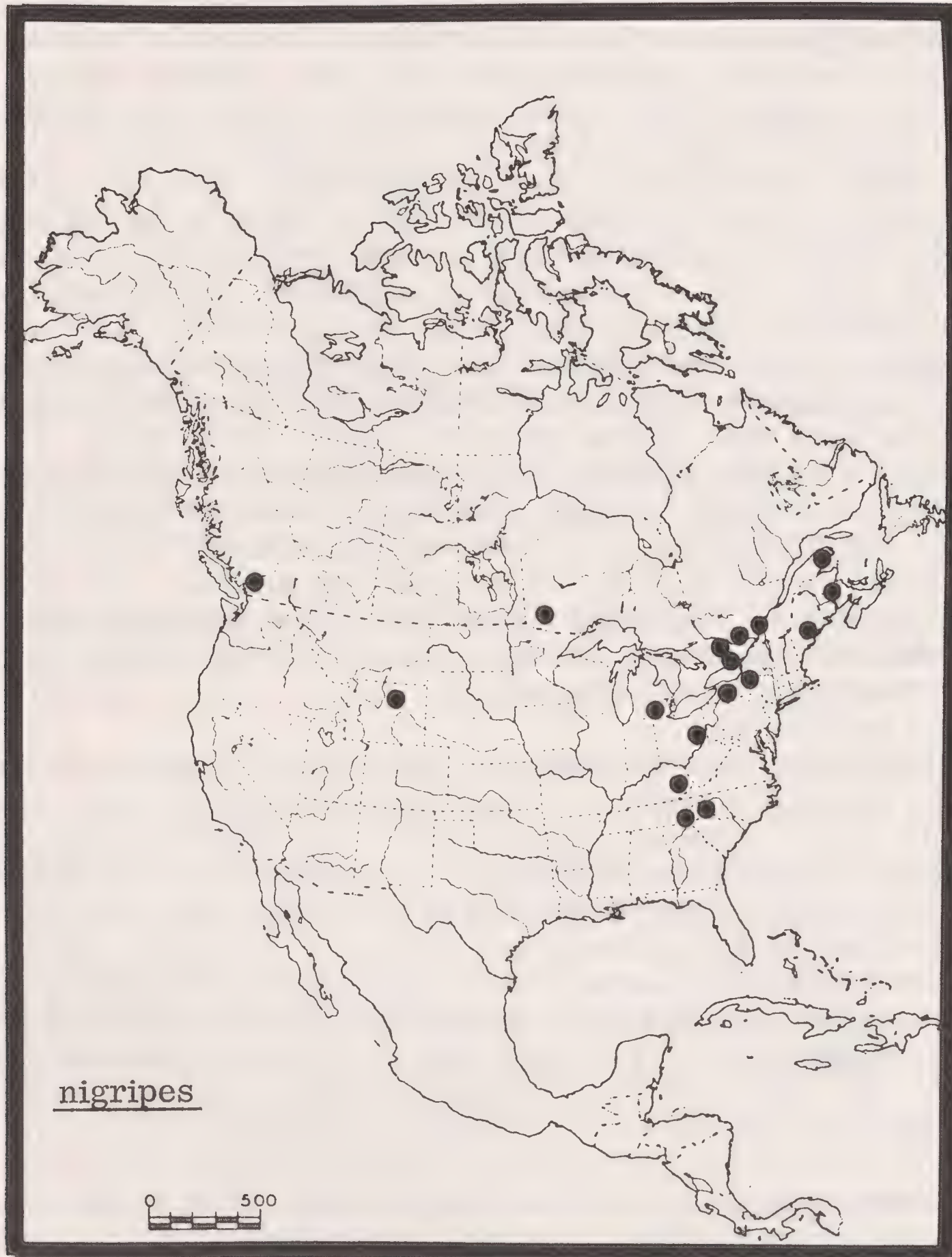
Male. Hind femur approx. 4.4–4.8 x as long as deep. Palpi white. Fore and middle trochanters mostly white. Fore and middle femora ferruginous, hind femur ferruginous with apical black band and black baso-ventral patch. Fore and middle tibiae white externally, ferruginous internally, hind tibia with narrow basal and apical dark bands, the median band dark ferruginous. Abdomen coloured as in female.

Material Examined. 55 males, 46 females

Distribution. CANADA. British Columbia: Agassiz. New Brunswick: Grey Mills. Ontario: Belleville; Constance Bay; Gloucester; One Sided Lake; Stittsville. Quebec: Chambly Co.; Lac Mondor; Mt. Albert; Ste. Thérèse.

Host and Biology. There are no rearing records for this species. Adults are active from late August through November, with a peak abundance in October. Its habitat appears to be grassy meadows.

Remarks. This species appears to be very closely related to ruficineta from the pacific northwest. Females of nigripes are distinguished by the much longer ovipositor, white inner surface of basal articles of antennal flagellum, and distinctly more melanic legs.



Cymodusa partis (Viereck)

Figs. 5, 6

Campoplex (Diadegma) partis Viereck, 1925, 1926. Can. Ent. 57(9): 227 (key); 58(11): 280. Male. des. Holotype: Aylmer, Quebec (CNC). Examined in 1984.

Cmpd. eyes strongly convergent ventrad in females, distinctly hairy. Fore wing with areolet closed. Ovipositor approx. 1.6-1.8 x as long as hind femur. Antennal flagellum entirely black or often with inner surface of basal articles white (females). Hind coxa black. Hind femur extensively to entirely

black, rarely ferrugineous. Abdominal tergites 2 to apex with alternating black and rufous bands (p. partis) to entirely black (many p. ocularis).

Female. Antennal flagellum with 25-28 articles, with basal article approx. 3.4-4.0 x as long as wide. Antennal scape with inner margin approx. 1.4-1.5 x as long as outer margin. Cmpd. eyes strongly convergent ventrad, distinctly hairy, with lower facets approx. 1.4 x as wide as upper facets. Face strongly shagreened, matte, with minute punctures. Tentorial pit separated from inner margin of eye by distance less than or equal to dia. of pit, never touching inner margin. Clypeus moderately convex, with anterior margin moderately convex. Lower 0.5 of mesopleuron moderately to coarsely rugoso-punctate. Propodeum moderately long, with apex projecting between bases of hind coxae approx. 0.2-0.3 x the length of hind coxa. Propodeal carinae weak to moderately strong, the costula weak or absent. Areola completely confluent with petiolar area. Petiolar area with moderately coarse reticulate wrinkling. Hind femur approx. 5.0-6.0 x as long as deep. Hind tarsal claw straight, with tip moderately to strongly bent. Petiolar segment of abdomen moderately decurving. Petiole approx. 1.2-1.3 x as long as postpetiole. Second abdominal tergite approx. 1.4-1.8 x as long as wide, with thyridium at basal 0.2. Ovipositor approx. 1.5-1.8 x as long as hind femur, stout, with depth at mid length equal to or greater than width of hind femur. Fore wing 3.2-5.0 mm. long. Hind wing with nervellus intercepted.

Antennal flagellum uniformly black or with inner margins of basal articles white. Head, thorax, petiolar segment of abdomen, bases of abdominal tergites 2-4 or sometimes to apex or entire abdomen, hind coxa, black. Palpi fulvous. Tegula white to fuscous. Fore coxa black with apex ferrugineous; middle coxa coloured as fore coxa or entirely black. Fore trochanter varying from yellow to ferrugineous to black and ferrugineous to black and fuscous; middle trochanter coloured as fore; hind trochanter with basal segment fuscous to black, apical segment yellow to fuscous. Ground colour of femora and tibiae ferrugineous, with highly variable degree of infuscation, sometimes hind femur entirely black. Hind tarsus fuscous.

Male. Coloured as in female.

There are two subspecies which can be distinguished in the following key.

- Cmpd. eye approx. 1.6-1.7 x as wide as long. Antennal flagellum often with inner surface of basal articles white (females). Abdominal tergites 2-4 or sometimes to apex with alternating black and rufous bands. Widely distributed.....partis partis (Viereck) (p. )
- Cmpd. eye approx. 1.8-2.0 x as wide as long. Antennal flagellum of females entirely black. Abdominal tergites 2-4 with black and rufous bands, the apex black, or abdomen entirely black. Colorado.....  
.....partis ocularis, new subsp. (p. )

Cymodusa partis partis (Viereck)

Fig. 5

Campoplex (Diadegma) partis Viereck, 1925, 1926. Can. Ent. 57(9): 227 (key); 58(11): 280. Male. des. Holotype: Aylmer, Quebec (CNC).

The characters given in the key are sufficient to describe this subspecies.

Material Examined. 62 males, 96 females

Distribution. CANADA. Alberta: Banff; Elkwater; Kananaskis; Lethbridge; Norton; onefour; Orion. British Columbia: Oliver; Osoyoos; Sawmill Lake; Stone Mt. Lake; Summit Lake; Terrace; Vancouver; West Bank. Manitoba: Carberry; Reynolds. New Brunswick: Jacquet R. Newfoundland: Port au Basques; St. Vincents; South Branch. Northwest Territories: Pagnirtung. Ontario: Hamilton; Marmora; One Sided Lake; Ottawa; Stittsville; Thunder Bay. Quebec: Lac Mondor; La Verendreye Pk.; Val Marie. Yukon Territory: North Fork Crossing. UNITED STATES. Alaska: Anchorage; Tok. California: Beatrice; San Bruno. Colorado: Boulder; Steamboat Springs. District of Columbia: Washington. Idaho: Galena Summit; Lowman; Mt. Pleasant; Stanley. Massachusetts: Fitchburg; Reading Highlands. Michigan: Iron River; Yellow Dog Plains. Minnesota: Big Fork. Montana: Bozeman; Glacier Nat. Pk. Nevada: Tuscarora. New Hampshire: Hanover. New York: Bemus Pt.; Oswego. Ohio: Columbus. Oregon: Calapooya; Cascadia; Ochoco Cr.; Selma; Sparks Lk.; Three Cr. Lake; Three Sisters. Pennsylvania: Cookshire. Vermont: Lake Willoughby. Virginia: Spruce Knob. Washington: Orens Is. West Virginia: Dolly Sodo Wild. Area.

Host and Biology. There are no rearing records for this subspecies. Adults are active from May through August with a peak abundance in July. It occurs in grassy meadows.

Remarks. There are two colour forms with regards to the basal articles of the antennal flagellum of females of this subspecies. One form has the inner surface of three to seven articles coloured white. It occurs primarily east of the Manitoba-Ontario border in Canada, and east of the Mississippi R. in the United States but is also widely scattered in western North America where it is rare (see map below). The second form has the antennal flagellum entirely black and occurs primarily in western North America.

Cymodusa partis ocularis, new subsp.

The characters given in the key above are sufficient to describe this subspecies.

Holotype. Female. Summit Lake, Mt. Evans, 12,800', Colorado, July 16, 1961, S. M. Clark. Deposited in Canadian National Insect Collection.

Paratypes. Colorado: nr. Estes Pk., June 15, 1948 (1 female), H., M., G., D., J. Townes (HMT); Independence Pass, Lake Co., 12,100', VII-31-1961 (1 female) B. H. Poole (CNC); Loveland Pass, 12,000', VIII-7-1961 (1 female), B. H. Poole (CNC); Mt. Evans, VII-27-VIII-4-1961 (7 males, 3 females), 12,000-14,000', S. M. Clark, J. G. Chillcott, W. R. M. Mason, B. H. Poole, J. R. Stainer (CNC); Summit Lake, Mt. Evans, 12,800', VII-16-17-1961, (2 males, 1 female), S. M. Clark and C. H. Mann (CNC) and July 18, 1964, 12,700' (2 males, 2 females), C. Dasch (CDC).

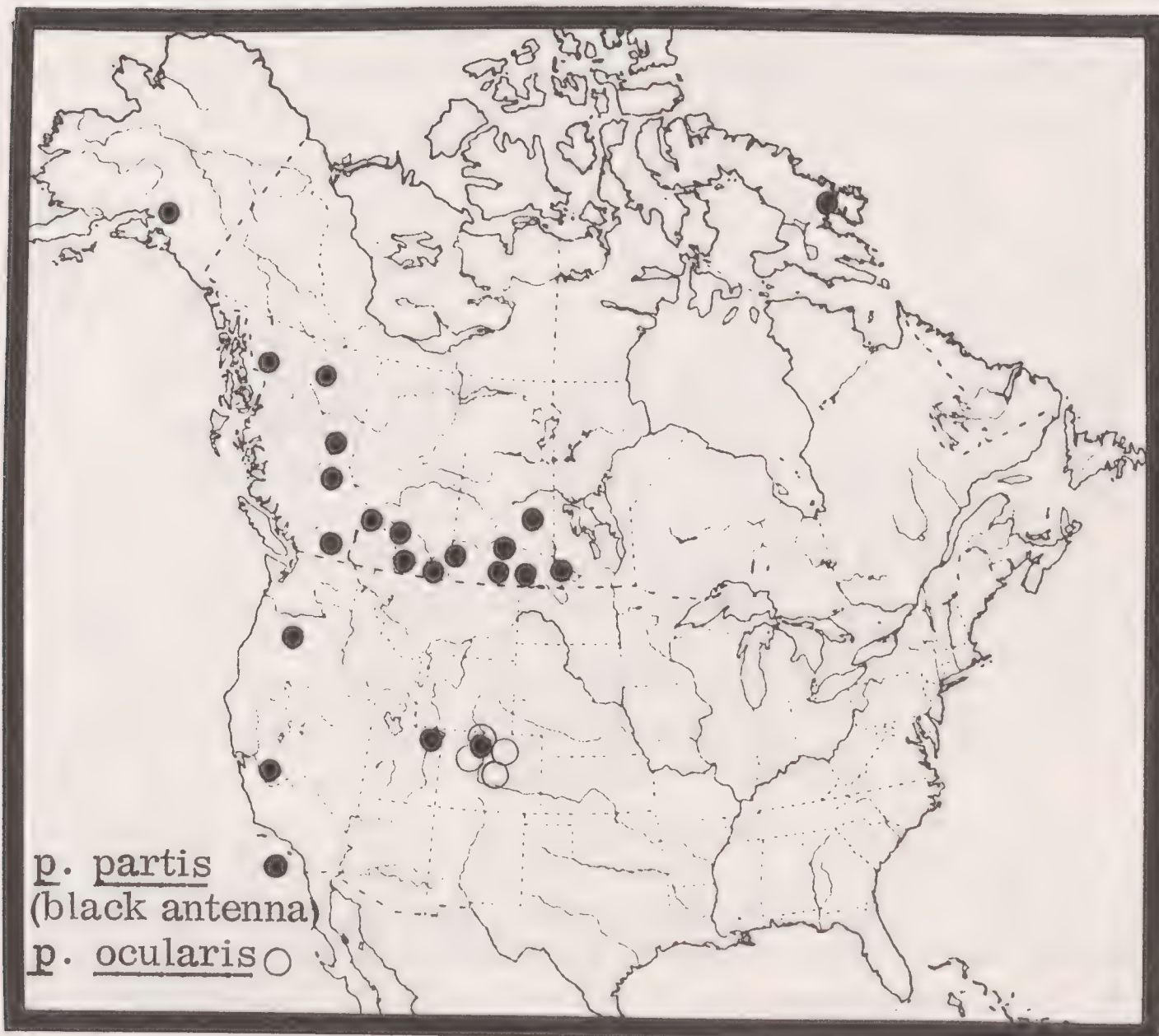
Etymology. The species epithet draws attention to the modified compd. eyes.

Host and Biology. There are no rearing records for this subspecies. All



specimens have been taken on alpine tundra at altitudes of 12,000-14,000 feet during July and August.

Remarks. The short, wide eyes and slightly produced mouthparts will distinguish this subspecies from p. partis.



Cymodusa distincta (Cresson)

Fig. 4

- Mesoleptus subrubidus Cresson, 1864. Proc. Ent. Soc. Phila., 3: 264. Male. des. Holotype: Illinois (ANSP). Examined in 1983.
- Limnerium vigilis Viereck, 1906. Trans. Amer. Ent. Soc., 32: 179. Male. des. Holotype: Lawrence, Kansas (KSM). Examined in 1983.
- Idechthis biconjunctus Viereck, 1906. Trans. Amer. Ent. Soc., 32: 180. Male. des. Holotype: Lawrence, Kansas (KSM). Examined in 1983.
- Campoplex (Nepiera) amassecontorum Viereck, 1917. Bull. Conn. Geol. Nat. Hist. Surv., 22: 266. Male. des. Holotype: New Haven Connecticut. Examined in 1983.
- Cymodusa plesius Viereck, 1925, 1926. Can. Ent. 57(7): 180 (key); 58(1): 4. Female. des. Holotype: Oliver, B. C. (CNC). Examined in 1984.
- Cymodusa provancheri Viereck, 1925, 1926. Can. Ent. 57(7): 180 (key); 58(1): 4. Female. des. Holotype: Kentville, Nova Scotia (CNC). New synonymy. Examined in 1984.

Cmpd. eyes strongly convergent ventrad in females, distinctly hairy. Fore wing with areolet closed. Ovipositor approx. 1.6-1.7 x as long as hind femur, stout, more or less straight. Antennal flagellum of female with inner surface of basal articles white. Hind coxa black with apical 0.5-0.7 ferrugineous. Abdominal tergites without regular banding pattern, tergites 3-5 usually entirely rufous.

Female. Antennal flagellum with 26-33 articles, the basal article approx. 4.3-4.4 x as long as wide. Antennal scape with inner margin approx. 1.4 x as long as outer margin. Cmpd. eyes strongly convergent ventrad, distinctly hairy, with lower facets approx. 1.5 x as wide as upper facets. Face strongly shagreened, matte, with minute, close-set punctures. Tentorial pit separated from inner margin of eye by distance less than or equal to dia. of pit. Clypeus strongly convex, its anterior margin moderately convex. Lower 0.5 of mesopleuron strongly shagreened, with small to medium sized close-set punctures, its surface weakly to strongly rugose. Propodeum moderately long, with apex projecting between bases of hind coxae 0.3-0.4 x the length of hind coxa. Propodeal carinae moderately strong, complete. Areola sometimes partially to completely separated from petiolar area by transverse carina. Petiolar area granulate, sometimes with weak wrinkling. Hind femur approx. 5.5-6.0 x as long as deep. Hind tarsal claw straight, with tip strongly bent. Petiolar segment of abdomen weakly decurving, with sides smooth, polished. Petiole approx. 1.4-1.5 x as long as postpetiole. Second abdominal segment approx. 1.6-1.8 x as long as wide, with thyridium at basal 0.2. Ovipositor approx. 1.6-1.7 x as long as hind femur, more or less straight, with depth at mid length equal to or slightly greater than width of hind basitarsus. Fore wing approx. 3.2-5.5 mm. long. Hind wing with nervellus intercepted.

Antennal flagellum with 3-7 basal articles white on inner surface or, very rarely, the flagellum entirely black. Head, thorax, abdominal petiole, basal 0.5-1.0 of postpetiole, bases of abdominal tergites 1, 2, basal 0.3-0.5 of hind coxa, black. Palpi white to fulvous. Tegula white to ferruginous. Fore and middle coxae extensively to entirely pale ferruginous; hind coxa with apical 0.5-0.7 ferruginous. Fore and middle trochanters pale yellow; hind trochanter with basal segment ferruginous to fuscous, apical segment

pale yellow. Femora ferrugineous. Fore and middle tibiae ferrugineous internally, whitish externally; hind tibia ferrugineous, with weak sub-basal and apical fuscous bands. Hind tarsus fuscous. Abdominal tergites 2, 3 with apices rufous; tergites 4, 5 entirely rufous; tergite 6 to apex partially infuscated, sometimes entirely rufous.

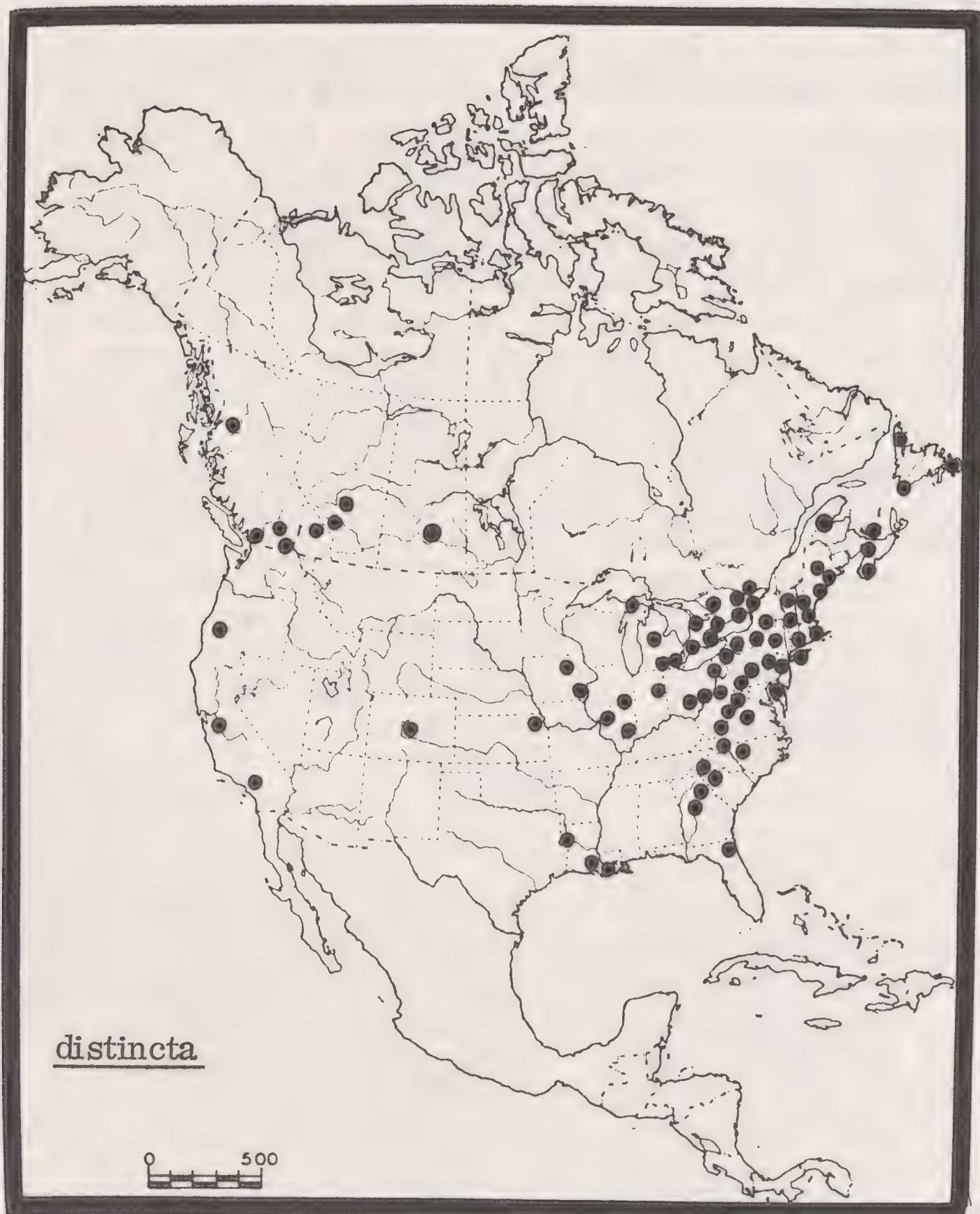
Male. Hind femur approx. 4.5-5.0 x as long as deep. Coloured as in female except that antennal flagellum always black and there is a tendency for the apical tergites to be darker .

Material Examined. 988 males, 1035 females

Distribution. CANADA. Alberta: Banff; Edmonton. British Columbia: Douglas; North Vancouver; Okanogan Falls; Oliver; Selkirk Mts.; Shennon Falls; Terrace. New Brunswick: Grey Mills. Newfoundland: Port au Basques; Raleigh; South Bend. Nova Scotia: Bridgewater; Truro. Ontario: Almonte; Ancaster; Ariss; Belleville; Bell's Corners; Brighton; Chalk River; Chatterton; Christie Lake; Constance Bay; Elmira; Finland; Fort Erie; Guelph; Hamilton; Innisville; Jockvale; Jordan; London; Madoc; Marmora; Merivale; Niagara Falls; Normandale; Ottawa; Rockport; Shannonville; St. Davids; St. Lawrence Nat. Pk; Southampton; South March; Stittsville; Strathroy; Thamesville; Tobermory; Tweed; Waubamie. Prince Edward Island: Alberton; Brackley Beach Nat. Pk.; Dalvay House Nat. Pk. Quebec: Aylmer; Breckenridge; Kirk's Ferry; Montreal; Ste. Flore. Saskatchewan: Elbow. UNITED STATES. California: Bear Valley; Laguna Beach. Connecticut: Canterbury; Green Falls; Hamden; Ledyard; Lyme; Sterling; Stonington; Voluntown. District of Columbia: Washington. Florida: Gainesville. Georgia: Atlanta; Hiawassee. Illinois: Urbana. Indiana: Tippecanoe Co. Iowa: Ames; Mt. Pleasant. Kansas: Lawrence. Louisiana: Opelousas; Shreveport. Maine: Casco; Dryden; Mt. Desert Is. Maryland: Bowie; Colesville; Cumberland; Glen Echo; Laurel; Silver Springs; Takoma Pk; Wheaton. Massachusetts: Chicopee; South Natick; Welleseley. Michigan: Ann Arbor; Detroit; Iron Co.; Nahma. Missouri: St. Louis. New Hampshire: Crawford Notch; Hampton; Mt. Washington; Pinkham Notch; Randolph; Stinson Lake. New Jersey: Cape May; Kancocas; Lakehurst; Moorestown. New York: Bemus Pt.; Blackbrook; Blasdell; Brainard; Buffalo; Colden; East Aurora; Fall Cr.; Farmingdale; Hamburg; Hancock; Hunter; Ithaca; McLean Bog; Medina; Middleton; Napeague; Oswego; Pelkham Bay; Poughkeepsie; Remsen; Rome; Sea Clift; Shokan; Slaterville; Spencer Lake; Spring Lake; Yankee Lake. North Carolina: Asheville; Cedar Mt.; Crabtree Meadows; Elon College; Flat Rock; Franklin; Hendersonville; Highlands; Mt. Mitchell; West Jefferson. Ohio: Cleveland; Columbus; New Concord; Otsego; Salineville; Seneca Lake; Steubenville; West Lancaster; Willoughby; Wooster. Oregon: Corvallis. Pennsylvania: Bartonsville; Castle Rock; Ft. Loudon; Gaines; Spring Brook; Stillwater. Rhode Island: Block Is.; Hopington; Kingston; Westerly. South Carolina: Cleveland; Greenville. Tennessee: Knoxville; White House. Vermont: Woodstock. Virginia: Black Pond; Falls Church; Galax; Glencarlyn; Great Falls; Mountain Lake; Rocky Knob; Shenandoah Nat. Pk.; Skyline Dr.; Vienna. West Virginia: Bowden; Spruce Knob.

Host and Biology. This is one of the commonest of species in the nearctic region yet there are no rearing records. It occurs in grassy meadows. Adults are active from May through September and there appears to be two generations in many areas.

Remarks. This species is easily distinguished from the similar partis partis and cruentata by the lack of a regular banding pattern on the abdomen. I have very carefully examined the type specimen of provancheri and compared it to specimens of distincta. They are identical except for the fact that the antennal flagellum of provancheri is entirely black. Since then, a number of other specimens have shown up with similarly dark antennae and no other discernable differences. I have concluded that distincta and provancheri are conspecific and that this is the identical situation found in partis where the flagellum also displays two colour forms. Therefore, provancheri becomes a junior synonym of distincta.



Cymodusa ruficincta, new sp.

Fig. 8

Cmpd. eyes strongly convergent ventrad in females, distinctly hairy. Antennal flagellum uniformly black in both sexes. Fore wing with areolet closed. Ovipositor approx. 1.4-1.6 x as long as hind femur, stout, straight. Abdominal tergites 2 to apex entirely rufous.

**HOLOTYPE.** Female. Antennal flagellum with 29 articles. Antennal scape with inner margin approx. 1.3 x as long as outer margin. Basal article of flagellum approx. 4.3 x as long as wide. Cmpd. eyes strongly convergent ventrad, distinctly hairy, with lower facets approx. 1.3 x as wide as upper facets. Face strongly shagreened, matte, with small punctures which are separated by distance less than dia. of single puncture. Tentorial pit separated from inner margin of eye by distance slightly less than dia. of pit. Clypeus moderately convex, its anterior margin moderately convex. Lower 0.5 of mesopleuron strongly shagreened, matte, rugolose, with punctures separated by distance less than dia. of single puncture. Propodeum with apex only slightly projecting between bases of hind coxae. Areola granulose, matte, separated from petiolar area by weak transverse carina. Petiolar area shagreened, somewhat polished, with numerous, moderately strong, irregular transverse wrinkles. Hind femur approx. 5.5 x as long as deep. Hind tarsal claw weakly curving. Petiolar segment of abdomen moderately decurving, with petiole approx. 1.5 x as long as postpetiole. Second abdominal tergite approx. 1.3 x as long as wide, with thyridium at basal 0.2. Ovipositor approx. 1.6 x as long as hind femur, straight, with depth at mid length distinctly greater than width of hind basitarsus. Fore wing approx. 4.5 mm. long. Hind wing with nervellus intercepted near basal 0.2.

Antennal flagellum, head, thorax, abdominal petiole, basal 0.5 of postpetiole, coxae (except apices), black. Palpi, tegula, fulvous. Apices of coxae, fore and middle trochanters, apical 0.5 of basal segment and entire apical segment of hind trochanter, femora, tibiae, hind tarsal segments 1-3, ferruginous. Basal 0.5 of basal segment of hind trochanter, tarsal segments 4, 5, fuscous. Apical 0.5 of postpetiole, tergites 2-apex rufous. Wings weakly infusate.

Range and Variation. Antennal scape with inner margin approx. 1.3-1.4 x as long as outer margin. Lower 0.5 of mesopleuron shagreened, matte to distinctly rugolose. Propodeum with areola weakly separated from to completely confluent with petiolar area. Hind femur approx. 5.4-5.7 x as long as deep. Ovipositor approx. 1.4-1.6 x as long as hind femur. Fore wing approx. 4.5-5.0 mm. long. No significant colour variation in specimens at hand.

Male. Unknown but probably resembling nigripes.

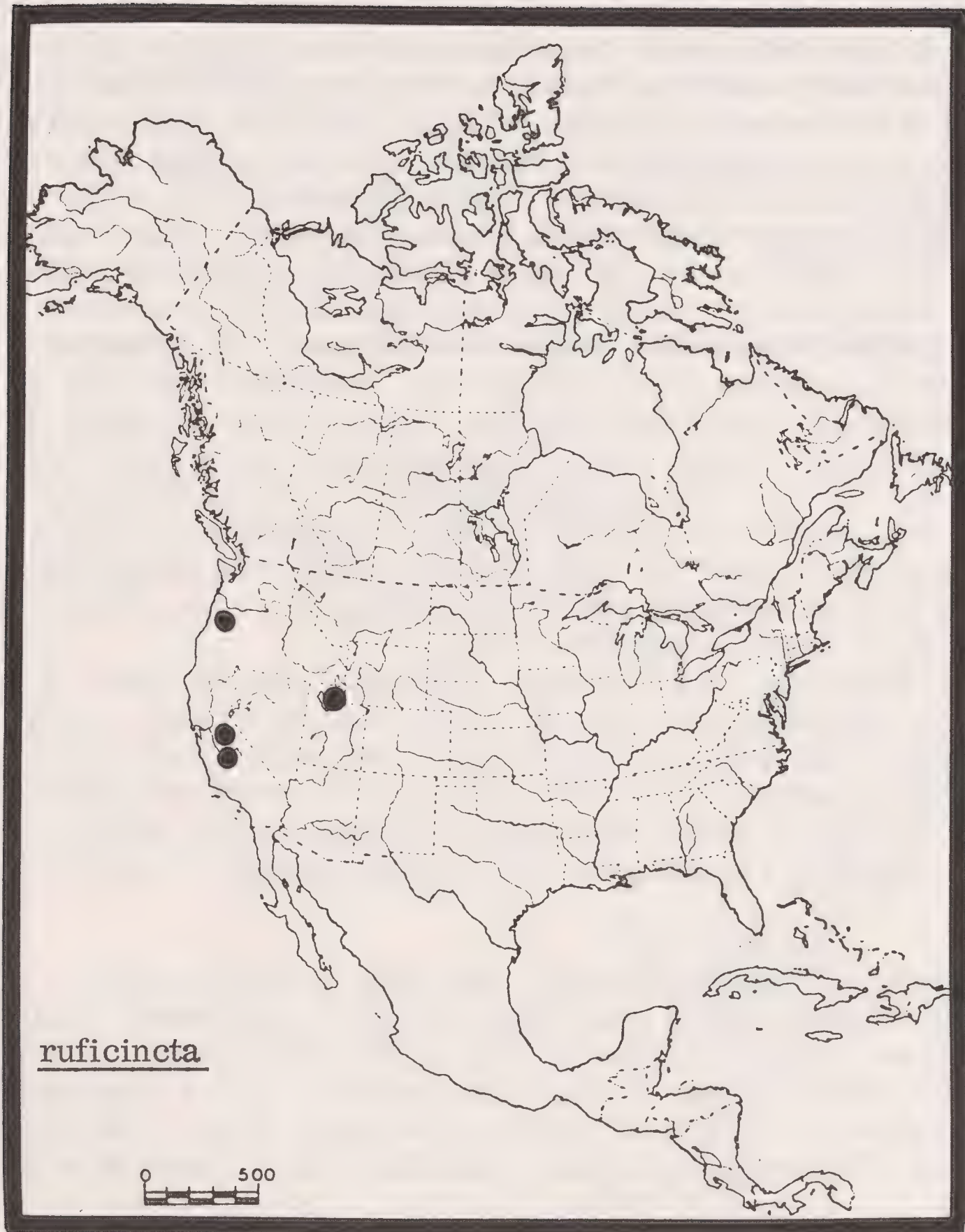
Holotype. Female. Corvallis, Oregon, Oct. 6, 1931, Collector unknown. Deposited in United States National Museum (USNM).

Paratypes. California: Del Puerto Canyon, Stanislaus Co., X-4-1975 (1 female), N. J. Smith (UCB); Dos Palos, Merced Co., VIII-31-1947 (1 female), V. M. Stern (UCB). Oregon: Corvallis, Aug. 6, 1965 (1 female), C. Dasch (CDC). Utah: Petersboro, July 4, 1958 (1 female), K. C. Tilley (USNM).

Host and Biology. There are no rearing records for this species. Adults are active in late summer.

Etymology. The species epithet refers to the extensively rufous abdomen.

Remarks. This species appears to be closely related to nigripes but the ovipositor of ruficineta is shorter and stouter and the antennal flagellum of ruficineta females is entirely black.



Cymodusa columbiensis, new sp.

Fig. 7

Cmpd. eyes strongly convergent ventrad in females, moderately hairy. Antennal flagellum uniformly black in both sexes. Fore wing 3.5–3.7 mm. long, with areolet closed. Abdominal tergites uniformly fuscous.

**HOLOTYPE.** Female. Antennal flagellum with 26 articles, the basal article approx. 3.6 x as long as wide. Antennal scape with inner margin approx. 1.4 x as long as outer margin. Cmpd. eyes strongly convergent ventrad, moderately hairy, with lower facets approx. 1.4 x as wide as upper facets. Tentorial pit separated from inner margin of eye by distance less than dia. of pit. Face strongly shagreened, matte, with minute punctures. Clypeus strongly convex, with anterior margin moderately convex. Lower 0.5 of mesopleuron strongly shagreened, matte, with small punctures which are separated by distance less than or equal to dia. of single puncture. Propodeum moderately long, with apex projecting between bases of hind coxae approx.

0.3x the length of hind coxa . Areola completely confluent with petiolar area. Hind femur approx. 5.4 x as long as deep. Hind tarsal claw straight, with tip moderately bent. Petiolar segment of abdomen weakly decurving, with petiole approx. 1.3 x as long as postpetiole. Second abdominal tergite approx. 1.9 x as long as wide, with thyridium positioned at basal 0.2. Ovipositor approx. 1.8 x as long as hind femur, weakly upcurving, with depth at mid length approx. equal to width of hind basitarsus. Fore wing approx. 3.5 mm. long. Hind wing with nervellus intercepted near basal 0.2.

Antennal flagellum, head, thorax, black. Dorsal surface of fore coxa, middle and hind coxae, basal segments of all trochanters, abdomen, fuscous. Apical segments of trochanters, legs, pale ferruginous. Tegula fulvous.

Range and Variation. Fore wing approx. 3.5-3.7 mm. long. No significant morphological or chromatic variation apparent in other specimens at hand.

Male. Unknown but abdomen probably uniformly fuscous as in female.

Holotype. Female. Summit Lake, mi. 392, Alaska Hwy., British Columbia. 4500', 28-VII-1959, E. E. Macdougall. Deposited in Canadian National Insect Collection, Ottawa (CNC).

Paratypes. One female. Same data as for holotype except 4700', VII-15-1959 (CNC).

Etymology. The species is named for the holotype collecting region.

Host and Biology. There are no rearing records for this species.



Cymodusa cruentata (Gravenhorst)

Fig. 9

Campoplex cruentatus Gravenhorst, 1829. Ichneumonologia europaea, 3: 575.  
Male, female. des. Holotype: Female. Poland, Wroclaw (Wroclaw).

Cmpd. eyes strongly convergent ventrad, distinctly hairy. Fore wing with areolet closed. Antennal flagellum uniformly black in females. Legs mostly ferruginous. Abdomen with alternating black and rufous bands on tergites 2 to apex.

Female. Antennal flagellum with 29-32 articles, the basal article approx. 3.8-4.0 x as long as wide. Antennal scape with inner margin approx. 1.4-1.5 x as long as outer margin. Cmpd. eyes strongly convergent ventrad, distinctly hairy, with lower facets approx. 1.4 x as wide as upper facets. Face strongly shagreened, matte, with minute, close-set punctures. Tentorial pit separated from inner margin of eye by distance less than dia. of pit. Clypeus moderately convex, with anterior margin moderately convex. Lower 0.5 of mesopleuron very strongly shagreened, matte, weakly to distinctly rugoso-punctate. Propodeum moderately long, with apex projecting between bases of hind coxae approx. 0.3-0.4 x the length of hind coxa. Propodeal carinae weak to moderately strong, complete. Areola often partially separated from petiolar area by transverse carina. Surface of petiolar area strongly shagreened, with weak reticulate wrinkling. Hind femur approx. 4.4-4.8 x as long as deep. Hind tarsal claw straight, with tip weakly bent. Petiolar segment of abdomen moderately decurving. Petiole approx. 1.4-1.5 x as long as postpetiole, the sides of petiole smooth, polished. Second abdominal tergite approx. 1.6-1.8 x as long as wide, with thyridium at basal 0.2. Ovipositor approx. 1.8-1.9 x as long as hind femur, straight to weakly upcurving, with depth at mid length approx. equal to width of hind basitarsus. Fore wing approx. 4.0-5.5 mm. long. Hind wing with nervellus intercepted near base.

Antennal flagellum, head, thorax, petiolar segment of abdomen, bases of abdominal tergites 2 to apex, fore and middle coxae (except apices), hind coxa, basal segment of hind trochanter, black. Palpi fulvous. Tegula, apices of fore and middle coxae, fore and middle trochanters (basal segments sometimes infuscated), apical segment of hind trochanter, femora, tibiae, ferruginous (hind femur sometimes with baso-ventral infuscated patch). Hind tarsus fusco-ferruginous.

Male. Hind femur approx. 4.4-4.9 x as long as deep. Coloured as in female except that tergites 3 or 4 to apex sometimes entirely black and hind femur generally with greater degree of infuscation.

Material Examined. 61 males, 32 females

Distribution. CANADA. Alberta: Banff. British Columbia: Clinton; Lac La Hache; mi 434, Alaska Hwy; Oliver; Stone Mt. Pk.; Summit Lake. Manitoba: Churchill. Northwest Territories: Baffin Is., Clyde Inlet; Pangnirtung; Salmita Mines; Tuktoyaktuk. Ontario: Smoky Falls, Mattagami R.. UNITED STATES. Alaska: Anchorage; Granite Cr.; Isabel Pass; mi206, Richardson Hwy. Idaho: Roberts. South Dakota: Fox Ridge. Also Colorado: Pagosa Spr.

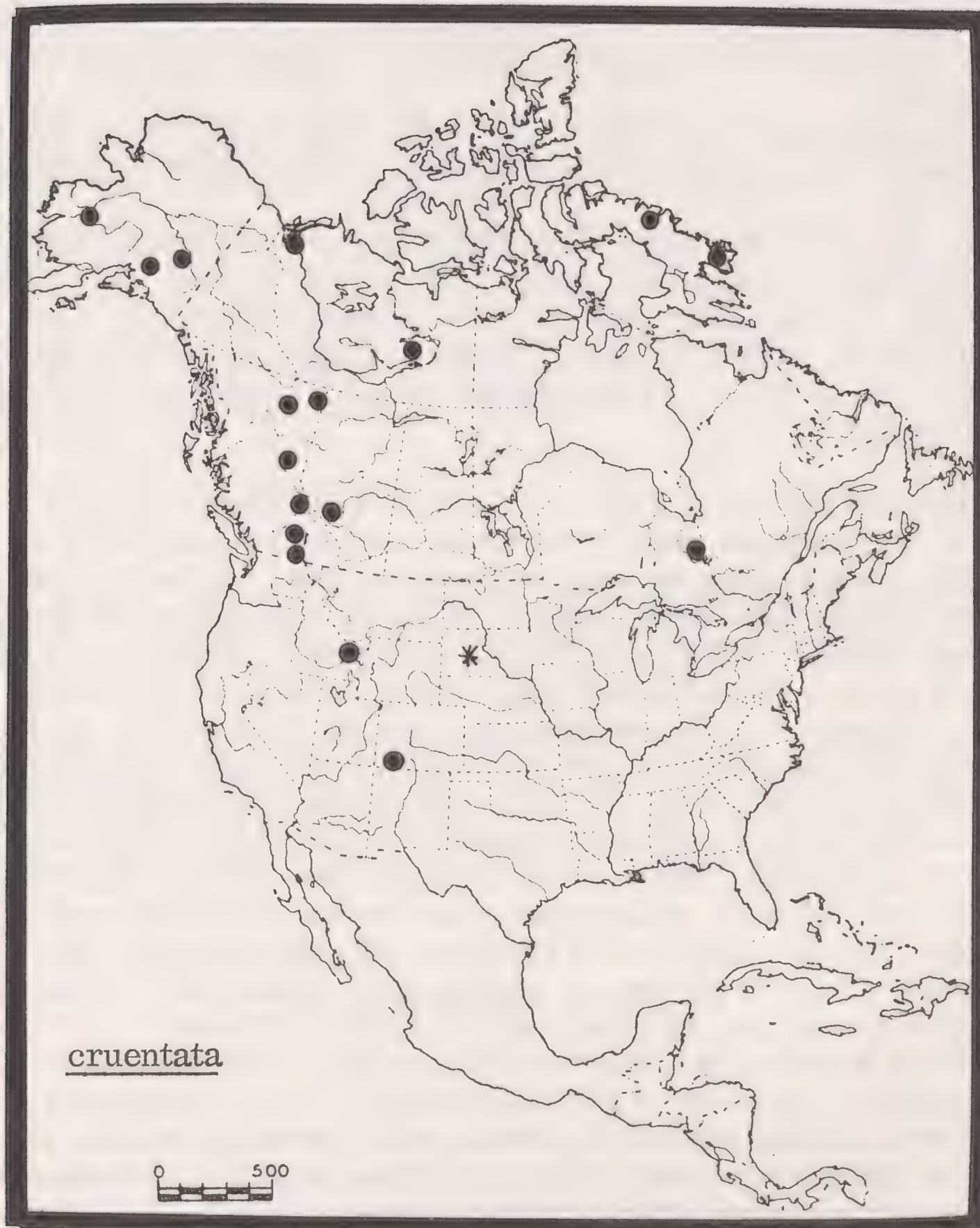
This species is widely distributed throughout the Holarctic region in



arctic, sub-arctic, and cool-temperate areas.

Host and Biology. There are no rearing records for this species from the nearctic region. It has been reared from Alsophila aescularia according to labels from palearctic specimens. Adults are active from June to September, with a peak abundance in July.

Remarks. The combination of entirely black antennal flagellum, black and rufous banded abdominal tergites and ferrugineous legs will distinguish this species from all other in the Cruentata Group.



## Melanocera Group

The characters given in the key are sufficient to describe this group. It is comprised of three species in the nearctic region: melanocera, montana, nicolei. The biology of this group is unknown but the species are presumed to attack small lepidoptera in grassy areas and meadows.

Cymodusa melanocera Viereck

Figs. 2, 10

Cymodusa melanocera Viereck, 1925, 1926. Can. Ent., 57(7):180 (key); 58(1):3. Male. des. Holotype: Saanich District, British Columbia (CNC). Examined in 1984.

Cymodusa gracilicornis Viereck, 1925, 1926. Can. Ent., 57(7):180 (key); 58(1):4. Female. des. Holotype: Georgetown, Ontario (CNC). Examined in 1984.

Cmpd. eyes very strongly convergent ventrad in females, distinctly hairy. Fore wing approx. 3.0-4.5 mm. long, with areolet closed. Second abdominal tergite approx. 2.0-2.4 x as long as wide. Ovipositor approx. 1.7-1.9 x as long as hind femur, straight, stout. Antennal flagellum of both sexes uniformly black. Abdominal tergites 2-4 with apical reddish bands, sometimes abdomen uniformly fuscous.

Female. Antennal flagellum with 28-32 articles, the basal article 5.5-6.0 x as long as wide. Antennal scape with inner margin approx. 1.4 x as long as outer margin. Cmpd. eyes very strongly convergent ventrad in females, distinctly hairy, with lower facets approx. 1.8 x as wide as upper facets. Face strongly shagreened, matte, with minute punctures. Tentorial pit touching inner margin of eye. Clypeus strongly convex, with anterior margin moderately convex. Lower 0.5 of mesopleuron strongly shagreened, matte, with minute punctures. Propodeum long, with apex projecting between bases of hind coxae approx. 0.4 x the length of hind coxa. Propodeal carinae rather weak, with costula often absent. Areola and petiolar area completely confluent. Petiolar area granulate, matte, without distinct wrinkling. Hind femur approx. 5.5-6.0 x as long as deep. Hind tarsal claw straight with tip moderately to strongly bent. Petiolar segment of abdomen straight to weakly decurving, the petiole approx. 1.1-1.2 x as long as postpetiole. Second abdominal tergite approx. 2.0-2.2 x as long as wide, with thyridium at basal 0.3. Ovipositor approx. 1.7-1.9 x as long as hind femur, straight, with depth at mid length distinctly greater than width of hind basitarsus. Fore wing approx. 3.0-4.5 mm. long, with areolet closed. Hind wing with nervellus weakly intercepted.

Antennal flagellum, head, thorax, petiolar segment of abdomen, hind coxa (except extreme apex which is ferrugineous), black. Palpi, tegula, white. Fore coxa pale ferrugineous dorsally, white ventrally; middle coxa ferrugineous. Fore trochanter with basal segment ferrugineous, apical segment white; middle trochanter with basal segment ferrugineous to pale fuscous, apical segment white to ferrugineous; hind trochanter with basal segment fuscous to black, apical segment white to ferrugineous. Fore femur ferrugineous; middle femur ferrugineous, with or without infuscated areas; hind femur ferrugineous to fuscous. Fore tibia ferrugineous internally, white externally; middle tibia with pale fuscous basal and apical bands, the median band yellow to ferrugin-

eous; hind tibia coloured as middle tibia. Hind tarsus pale fuscous.

Male. Hind femur approx. 4.5-5.0 x as long as deep. Coloured as female except that fore and middle coxae often more extensively white.

Material Examined. 756 males, 780 females

Distribution. CANADA. Alberta: Frank; Kananaskis. British Columbia: Kaslo; Kelowna; Keremeos; Robson; Victoria. Manitoba: Cranberry; Portage. Nova Scotia: Truro. Ontario: Brittania; Latta; Stittsville. Quebec: Aylmer; Hull; Low; Timagami. UNITED STATES. Alabama: Longdale. Arizona: Cave Cr. Flagstaff; Negalis; Oak Cr.; Pocket Cr.; Portal; Ruby; Sierra Vista; Huachaca Mts.; Tucson. California: Almanor; Beatrice; Dario; Davis; Lake Wohlford; Legget; Leona Heights; Mill Valley; Mono Lake; Oakland; White Cloud; Woodside. Colorado: Bond; Boulder; Gould; Phantom Valley. District of Columbia: Washington. Georgia: Atlanta. Idaho: Bliss; Idaho City; Osgoode; St. Martin; Stanley; Tuttle. Kansas: Hodgeman Co. Maryland: Hall; Laurel; Takoma Pk. Wheaton. Massachusetts: Sherborne. Michigan: Ann Arbor; Huntington Woods; Nahma. Montana: Greenough. Nebraska: Valentine Refuge. New Jersey: Moorestown. New Mexico: Albuquerque; Cherry Cr. Camp; Gila Nat. Forest; Sandia Mts; Water Canyon Camp. New York: Bemus Pt.; Farmingdale; Ithaca; Oswego; Wilmington; Yonkers. North Carolina: Crabtree Meadows; Highlands; Mt. Mitchell. Ohio: New Concord. Oregon: Corvallis; Hyatt Reserve; Lapine; Mt. Angel; Ochoco Cr.; Pinehurst; Selma; Tumalo; Vale. Rhode Island: Westerly. South Carolina: Cleveland; Greenville. Tennessee: Knoxville. Virginia: Bluemont; Middle Mt.; Skyline Dr. Washington: Rochester. West Virginia: Bolivar; Spruce Knob. Wisconsin: Gurney. MEXICO. Guerraro; Vera Cruz. ECUADOR. Ona.

Host and Biology. There are no rearing records for this species in spite of its abundance in collections. Adults are active from May through August and there appear to be two generations in some areas.

Remarks. This species is distinguished from its close relative, montana, by the longer basal article of the antennal flagellum, and the longer second abdominal tergite. It is distinguished from nicolei in having the areolet of the forewing closed and the second abdominal tergite shorter.

Cymodusa montana, new sp.

Fig. 11

Cmpd. eyes very strongly convergent ventrad in females, distinctly hairy. Propodeum long, distinctly projecting between bases of hind coxae. Antennal flagellum uniformly dark coloured in both sexes. Fore wing approx. 4.5-5.0 mm. long, with areolet closed. Second abdominal tergite approx. 2.0 x as long as wide. Abdomen with alternating black and ferruginous bands or with black extending dorso-medially to apical margins of tergites, the apical lateral corners ferruginous.

HOLOTYPE. Female. Antennal flagellum with basal article approx. 4.7x as long as wide. Antennal scape with inner margin approx. 1.5 x as long as outer margin. Cmpd. eyes very strongly convergent ventrad, distinctly

hairy, with lower facets approx. 1.4 x as wide as upper facets. Tentorial pit touching inner margin of eye. Face strongly shagreened, matte, with minute, close-set punctures. Clypeus moderately convex, with anterior margin moderately convex. Lower 0.5 of mesopleuron strongly shagreened, matte, with small punctures which are separated by distance 1.0-1.5 x dia. of single puncture. Propodeum long, with apex projecting between bases of hind coxae approx. 0.4 x the length of hind coxa. Areola completely confluent with petiolar area, the surface of both areas granulose, matte. Hind femur approx. 6.8 x as long as deep. Hind tarsal claw with tip moderately bent. Petiolar segment of abdomen weakly decurving, with petiole approx. 1.6 x as long as postpetiole. Second abdominal tergite approx. 1.9 x as long as wide, with thyridium at basal 0.2. Ovipositor approx. 1.7 x as long as hind femur, straight, with depth at mid length distinctly greater than width of hind basitarsus. Fore wing approx. 5.0 mm. long, with areolet closed. Hind wing with nervellus intercepted near basal 0.2.

Antennal flagellum, head, thorax, petiolar segment of abdomen, bases of tergites, coxae (except apex of fore coxa), black. Palpi fulvous. Tegula ivory. Fore and middle trochanters extensively yellowish, hind trochanter with basal segment fuscous, apical segment yellowish. Femora (except apex of hind which is infuscated), tibiae, apical bands of tergites 2 to apex, ferruginous. Hind tarsus fuscous.

Range and Variation. Hind femur approx. 5.9-6.8 x as long as deep. Abdominal petiole approx. 1.4-1.5 x as long as postpetiole. Second abdominal tergite 1.9-2.2 x as long as wide. Ovipositor approx. 1.5-1.7 x as long as hind femur. Fore coxa yellow to extensively black; middle coxa ferruginous to black. Hind femur with variable degree of infuscation. Abdominal tergites black and ferruginous banded or with black extending dorso-medially to apical margins of tergites, the apico-lateral corners ferruginous.

Male. Face with dense silvery pubescence. Hind femur approx. 5.2-5.4 x as long as deep. Petiolar segment of abdomen straight. Fore and middle coxae, fore and middle trochanters, apical segment of hind trochanter, pale yellow. Hind coxa, abdomen, black. Hind femur extensively infuscated to black. Hind tibia with weak fuscous sub-basal and apical bands, the median band fulvous to ferruginous.

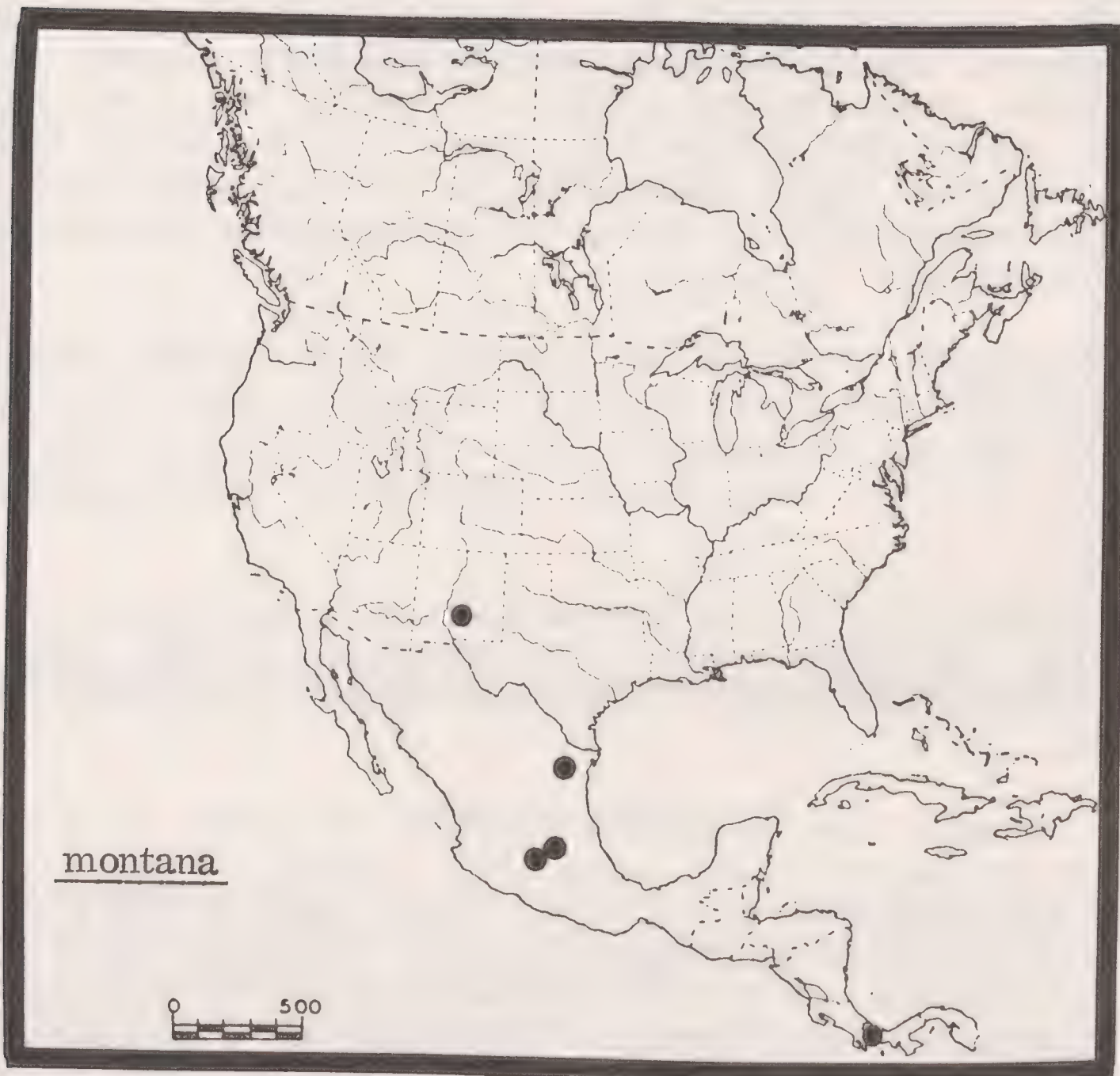
Holotype. Female. Mexico, Mexico, 24.5 mi. nw. Toluca, July 30, 1962, Naumann and Marston. Deposited in Snow Museum, University of Kansas.

Paratypes. UNITED STATES. Texas: Guadalupe Mts, 7750' VII-21-1975 (4 males), S. & J. Peck (HMT). MEXICO. 15.5 mi. e. Toluca, 9500', July 6, 1961, U. Kans. Mex. Exped. (1 female), (KSM); Hidalgo, 5 mi. n. Pachuca, 8750', Aug. 25, 1962 (1 male), Ordway, Marston (KSM); Linares, X-5-1962 (1 male), H. & M. Townes (HMT); Mexico no. 5, 7.5 mi. se. Amecameca, 9,600', July 1, 1961 (2 males), G. W. Byers (KSM). PANAMA. Cerro Punta, VI-1-1977 (1 male), H. & A. Howden (HMT).

Etymology. The species epithet refers to the high altitudes at which this species occurs.

Host and Biology. There are no rearing records for this species. There appear to be two generations as specimens have been taken in July and October.

Remarks. See remarks under melanocera.



Cymodusa nicolei, new sp.

Fig. 12

Cmpd. eyes very strongly convergent ventrad in females, distinctly hairy. Petiolar segment of abdomen straight. Propodeum distinctly projecting between bases of hind coxae. Fore wing with areolet open. Second abdominal tergite approx. 5.0 x as long as wide. Abdominal tergites uniformly fuscous.

**HOLOTYPE.** Female. Antennal flagellum with 34 articles, the basal article approx. 5.5 x as long as wide. Antennal scape with inner margin approx. 1.6 x as long as outer margin. Cmpd. eyes very strongly convergent ventrad, distinctly hairy, with lower facets approx. 1.8 x as wide as upper facets. Face strongly shagreened, matte, with minute punctures. Tentorial pit touching inner margin of eye. Clypeus strongly convex, its anterior margin moderately convex. Lower 0.5 of mesopleuron strongly shagreened, matte, with minute punctures. Propodeum long, with apex projecting between bases of hind coxae approx. 0.4 x the length of hind coxa. Areola approx. 0.9 x as long as petiolar area, the areola and petiolar area completely confluent. Surface of petiolar area with reticulate pattern of wrinkling laterally. Hind femur approx. 5.6 x as long as deep. Hind tarsal claw with tip strongly bent. Petiolar segment of abdomen straight, with petiole approx. 1.3 x as long as postpetiole. Second abdominal tergite approx. 3.0 x as long as wide, with thyridium at basal 0.4. Ovipositor approx. 1.6 x as long as hind femur, straight, with depth at mid length approx. equal to width of hind basitarsus. Fore wing approx. 4.2 mm. long, with areolet open. Hind wing with nervellus intercepted very near base.

Antennal flagellum, head, thorax, hind coxa (except apex), petiolar segment of abdomen, black. Abdominal tergites 2 to apex, fuscous. Palpi, tegula, fore and middle coxae, fore and middle trochanters, apical segment of hind trochanter, outer surface of fore tibia, ivory. Fore and middle femora, inner surface of fore tibia, entire middle tibia, pale ferruginous. Hind femur, hind tibia, ferruginous. Hind tarsus with ground colour ferruginous but uniformly infuscated.

Range and Variation. Antennal flagellum with 33-36 articles. Antennal scape with inner margin 1.5-1.6 x as long as outer margin. Basal flagellar article approx. 5.4-5.6 x as long as wide. Hind femur 5.3-5.7 x as long as wide. Fore wing 4.5-6.0 mm. long. No significant colour variation in specimens at hand.

Male. Hind femur 4.8-5.3 x as long as deep. Fore and middle legs paler than in female. Hind femur more or less completely, evenly infuscated. Hind tibia ferruginous medially, infuscated basally and apically. Hind tarsus fuscous.

Holotype. Female. Cleveland, South Carolina, VI-4-1961, G. F. Townes. Deposited in Townes collection, Gainesville, Florida.

Paratypes. North Carolina: Mt. Pisgah, 3,000', Sept. 5, 1939 (1 male, 1 female), H. & M. Townes (HMT). South Carolina: Cleveland, VI-19-VII-17, 1961 (33 males, 5 females), G. F. Townes (HMT) and July 3, 1971, (3 males), G. Townes family (HMT); Columbia, VIII-14-1951, G. & L. Townes (HMT). Tennessee: Lexington, Natchez St. Pk., 15-19, June, (1 male), and 23, June, 1972 (6 males), G. Heinrich (CNC).

Etymology. This species is named in honour of Nicole Hughes in recognition of the many hours she spent mounting and labelling specimens for my research.

Host and Biology. There are no rearing records for this species. Adults are active from June to September and there may be two generations.

Remarks. This species is most closely related to melanocera, its sister species is unknown. It is easily distinguished from all north american Cymodusa by the unusually elongate, uniformly coloured abdomen, and the open areolet in the fore wing.



#### Acknowledgements

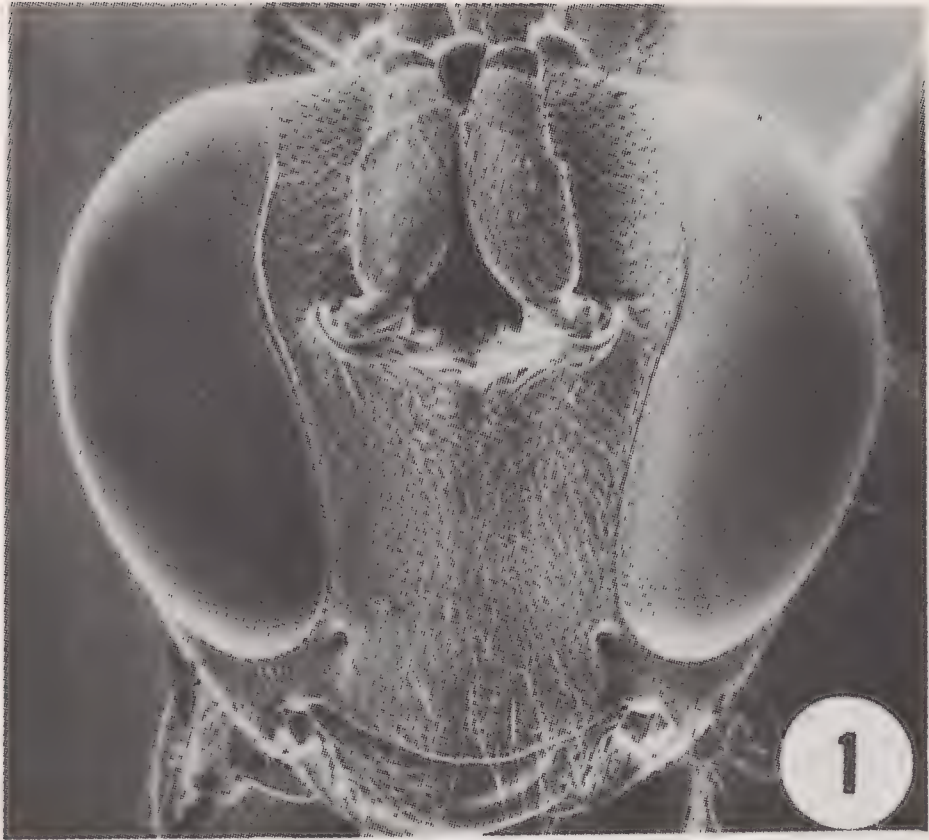
This research was funded, in part, by an NSERC (Natural Sciences and Engineering Research Council of Canada) operating grant held by Dr. S. B. Peck, Dept. of Biology, Carleton University, Ottawa. Additional funds came from an NSERC postdoctoral fellowship held by the author. Luis Ling of Carleton produced the S.E.M. photomicrographs.

The sources for specimens used in this research and the abbreviations used in the text to indicate deposition of type material are identical to those found in my Xylophylax revision immediately preceding this paper in this contribution.

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*Cymodusa* spp.: Figs. 1-2, frontal view of head: 1, nigripes; 2, melanocera. Figs. 3-6, propodea: 3, nigripes; 4, distincta; 5, partis partis; 6, partis ocularis.



*Cymodusa* spp.: Figs. 7-12, propodea: 7, columbiensis; 8, ruficincta; 9, cruentata; 10, melanocera; 11, montana; 12, nicolei.